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First report of *Rhabdias* sp. infecting *Leptodactylus macrosternum* from the Caatinga domain, Neotropical region

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ABSTRACT

On 27 March 2011, 20 specimens of *Leptodactylus macrosternum* were collected in the municipality of Aiuaba at the Ecological Station of Aiuaba, state of Ceará, Brazil. Of the 20 frogs examined, four were infected with lung nematodes. Five specimens of *Rhabdias* sp. are found. To our knowledge, *L. macrosternum* is a new host for *Rhabdias* sp.

Key Words: Parasitism; Semi-arid region; Nematodes.

Leptodactylus macrosternum Miranda-Ribeiro, 1926, occurs in the northeast of Brazil (Frost, 2018). It is a medium-sized frog which features nocturnal activity and diet consisting mainly arthropods (Teles *et al.*, 2018), included consumption of crustaceans (Teles *et al.*, 2014.). Here, we report the nematode infection in the respiratory tracts of *L. macrosternum* in an area of Caatinga in Aiuaba, Ceará, northeastern Brazil. Twenty specimens of *L. macrosternum* (15 males; mean SVL= 63.67 ± 7.71 mm; range = 84. 13 – 52. 43 mm; five females; mean SVL= 72.97 ± 10.40 mm; range 87.28 – 58.99 mm) were collected in the municipality of Aiuaba at the Ecological Station of Aiuaba, Brazil (6.573476°S; 40.123564°W, datum SAD69; 466 m a.s.l.), on 27 March 2011 and examined for endoparasites. Each specimen was dissected by a longitudinal incision and respiratory and digestive tracts were removed and analyzed separately (stomach, small intestine and large intestine) and body cavity. Helminths were preserved in 70% alcohol and subsequently mounted on temporary slides using Hoyer's medium, and identified beneath a light microscope. Of the 20 frogs examined, four were infected with lung nematodes. The nematodes were identified (according to Vicente *et al.* 1990 and Kuzmin *et al.* 2015) as: *Rhabdias* sp. (Fig. 1), and later deposited in the parasitological collection of the Universidade Regional do Cariri (URCA-P: 518). The prevalence and intensity of infection were calculated according to Bush *et al.* (1997). Overall prevalence was 20% (4/20) and the intensity of infection was 1.25. The prevalence in males was 20% (3/15) and intensity of infection 1.33. On the other hand, prevalence in females was 20% (1/5) and intensity of infection 1. The nematodes genus *Rhabdias* Stiles & Hassal, 1905 can be found infecting lungs of anuran amphibians and less commonly in lizards, snakes and salamanders (Kuzmin *et al.*, 2016; Teles *et al.*, 2014). In South America, there are 19 species of *Rhabdias* reported to affect the respiratory tract of amphibians (Kuzmin *et al.*, 2016; Campião *et al.*,

Figure 1. Specimen of *Rhabdias* sp. found in the lungs of *Leptodactylus macrosternum*.

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2014). There are records of *Rhabdias* sp. infections in Bufonidae, Brachycephalidae, Hylidae, and Leptodactylidae in Argentina and Brazil (Campião *et al*., 2014) and most recently in *Proceratophrys aridus* (Odontophrynidae), Caatinga domain, in Brazil (Teles *et al.*, 2017). There are still few studies on the effects of infections caused by nematodes of the genus *Rhabdias* on amphibians hosts. However, in an experimental study conducted by Goater and Ward (1992) they observed that in juvenile anurans of the *Bufo bufo* species they had their body growth and their survival reduced due to the infection caused by *Rhabdias bufonis*. The host specimens examined did not exhibit evident malformations or behavioral changes. To our knowledge, *L. macrosternum* is a new host for *Rhabdias* sp.

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